

AN INSULAR POPULATION OF *LERISTA GRIFFINI*
AND COMMENTS ON THE IDENTITY OF
LERISTA PRAEFRONTALIS
(LACERTILIA: SCINCIDAE)

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Lerista praefrontalis Greer, 1986 was originally described from a single specimen that differed from all other members of the *Lerista bipes* species group in having prefrontal scales (hence the name) and four instead of five phalanges in the fourth toe of the pes.

This specimen was collected in litter among sand at the base of cliff on King Hall Island (16°05'S, 123°25'E) in the Buccaneer Archipelago off the Kimberley coastline. King Hall is one of the outer islands made up of sandstones that dominate the Yampi Peninsula with associated skeletal sandy soils (Ehmann 1992). The island is elevated and steep with tumbled sandstone boulders, rockfaces and small gorges, and is mainly vegetated with *Acacia* shrubs over *Plectrachne* hummock grasses. All members of the *Lerista bipes* species group are efficient sand-swimmers and are best represented in sandy coastal and desert regions (Wilson and Knowles 1988).

We visited King Hall Island on 18 August 1992 to collect further specimens of *L. praefrontalis*. After circling the island (209 hectares) it became obvious that the only sandy habitat suitable for *Lerista* spp. were small shell and/or grit beaches (we noticed only two on the island of any significant size) with a small, low sandy dune vegetated primarily with mixed coastal *Spinifex* and *Plectrachne*. At the rear of the dunes several *Ficus* sp. trees provided a dense layer of leaf litter. These sites were surrounded by either a gradual or steep sandstone slope. We searched the island for two days and found four *Lerista* specimens on the beach dunes; three were raked from sand beneath *Ficus* leaf litter and the other was excavated by hand after following its track. Though not in great numbers, the meandering tracks of these lizards were obvious on the dunes. From our position on King Hall Island similar beaches of varying sizes could be seen on other islands in the area.

We were surprised to discover that every one of our four specimens lacked prefrontal scales. In this and all other readily observable features, these specimens closely resembled *L. griffini* Storr, 1982. *L. griffini* is recorded from the semi-arid zone of west Kimberley (Dampier Land) and of east Kimberley (lower Ord valley), and extending from latter into extreme north-west of Northern Territory (Storr 1982). To our knowledge this was the first insular record for *L. griffini*.

Given the relatively small area of suitable sandy substrate on the island for burrowing skinks, and the observation that population densities are comparatively low on these isolated beaches, how likely is it that two closely related and similar sized species would coexist on King Hall Island? Elsewhere some members of this species group do occur sympatrically. For instance *L. ips* and *L. vermicularis* are sometimes found together on sand dunes (Ehmann 1992, and G Harold *pers comm*), however these species differed considerably in size. We have also collected the more comparably sized *L. greeri* and *L. robusta* at the same site. As far as we know, the closest occurrence of coexistence by members of this group to King Hall Island is on the Dampier land peninsula at Cape Leveque, located about 65 km to the south-west. At this locality the smaller, lighter *L. bipes* occurs on coastal dune areas while the larger, darker *L. griffini* occurs on the more vegetated back dunes and shrublands where the soil is heavier (Greer 1989 and *pers obs*).

Also in the Kimberley, the range of *L. greeri* tends to be north of *L. bipes* (Storr 1982). Considering that *L. griffini* and *L. praefrontalis* are similar sized (SVL up to 67mm) we regard it as unlikely that two species of the group could occur on King Hall Island. Ehmann (1992) hypothesised that *L. praefrontalis* may be a relictual form, either marooned there by sea-level rises or carried there by floodwaters from an earlier population on the adjoining mainland that may now be extinct, however he was unaware of the presence of *L. griffini* on the island.

Apart from the differences in the prefrontal region and in the number of phalanges the type descriptions of *L. praefrontalis* and *L. griffini* are practically identical. Greer (1987) collected 17 *L. griffini* on the mainland and found no variation in the phalangeal formula of the fourth toe. However, the phalangeal formula is by no means universally constant in populations of *Lerista* spp., indeed Greer (1989) noted variation in seven of 54 species. No variation was found in species from the *L. bipes* species group. Prefrontals are primitively present in *Lerista* spp. [(Eg *L. elegans* group of Storr (1971)] with one scale typically present on each side of the head. All members of the *Lerista bipes* species group as diagnosed by Greer (1986) lack prefrontals. In *L. griffini* the prefrontals are clearly fused to the frontal forming one composite scale. Interestingly enough, Greer's (1986, Fig 1) illustration of *L. praefrontalis* shows two prefrontal scales on each side of the head, as well as a high degree of asym-

metry in scale size and shape.

Scale anomalies in reptiles are well documented. For example (Ehmann 1992) illustrates a *Menetia amaura* with a single supraciliary scale on one side and two on the other, and even suggests that this species may be based on an aberrant specimen of *M. greyii* which is very abundant at the type locality. Annable (1985) noted subcaudal scale variation in *Pseudonaja textilis* as did (Schwaner *et al.* 1988) for an island population of *Morelia spilota imbricata*. Skeletal and scale anomalies may be the product of atypical environmental conditions during development or may be an expression of abnormal genetic control (Plummer 1979). On an island with small, discontinuous patches of suitable habitat, genetic variation is likely to have been reduced through "bottle-necks" and lack of genetic drift (Frankel and Soule 1960). In addition, the likelihood of direct inbreeding leading to genetic instability would seem quite high in such circumstances.

Given the unusual nature of the head scalation of the holotype of *L. praefrontalis*, combined with the unlikely occurrence of two, similar sized *Lerista* species within the one habitat type on the island, we strongly suspect that *L. praefrontalis* is based on an aberrant individual of *L. griffini*. On the other hand, because the reduced phalangeal formula of *L. praefrontalis* has not yet been duplicated in any specimen, of *L. griffini*, we yet remain open-minded (albeit only a little open). Clearly, further fieldwork on

King Hall Island (and elsewhere in the Buccaneer Archipelago) is required to fully resolve this issue.

Our experience with *Lerista praefrontalis* leads us to several general conclusions as follows: 1. taxonomists should err on the side of conservatism when describing taxa based on potentially very small or isolated populations. 2. taxa based on such populations/individuals should be treated with caution in regard to awarding special conservation status, inclusion in action plans, application of common names (the Yampi Sandslider and Buccaneer Burrowing Skink are available for *L. praefrontalis*), and the potentially inappropriate use of limited research funds.

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